EVALUATION AND SENSITIVITY TEST OF SOLID SOAP FORMULATION OF SPIRULINA SP AND HONEY ON ESCHERICHIA COLI BACTERIA AND CANDIDA ALBICANS FUNGUS

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ABSTRACT

Background: ***Background:*** *Commercial soaps generally contain synthetic chemicals such as sodium lactate, which is used as a humectant to enhance soap moisture, while fragrance is added to improve product appeal, which may cause skin irritation in certain individuals. Spirulina sp. is known to have nutritional content with antibacterial and antimicrobial properties, while honey acts as a natural moisturizer that helps maintain skin hydration.* ***Objective:*** *To evaluate the potential use of natural ingredients, Spirulina sp. and honey, as alternative natural ingredients in solid soap formulations and to test their sensitivity against Escherichia coli bacteria and Candida albicans fungi* ***Method****: Solid soap evaluation was conducted according to SNI 3532:2021, and the sensitivity test against Escherichia coli bacteria and Candida albicans fungi was carried out using the well diffusion method to measure the inhibition zones formed.* ***Results of the study:*** *Showed that the solid soap met quality standards in terms of foam height (29.9% to 41.1%), pH (8.4 to 9.9), ethanol-insoluble substances (3.75% to 4.72%), and moisture content (15.48% to 17.81%). However, the free fatty acid content exceeded the limit set by SNI 3532:2021, with results ranging from 12.90% to 18.23%, whereas the maximum limit is 2.5%. Sensitivity tests indicated that the soap exhibited moderate activity against Escherichia coli, with inhibition zones ranging from 2.5 mm to 7.5 mm, and strong activity against Candida albicans, with inhibition zones ranging from 2.5 mm to 15 mm.* ***Conclusion:*** *The results of this study are expected to contribute to the development of effective and safe natural solid soap products and to enhance scientific knowledge regarding the utilization of natural ingredients such as Spirulina sp. and honey in skincare products*

Keywords: *Solid soap, Spirulina sp., honey, Escherichia coli, Candida albicans, sensitivity test.*